Strategic Engineering of Human Resources Development (HRD) to Respond to the Digital Transformation Era in the Context of Business Information Systems

I Dewa Gede Sayang Adi Yadnya, Fitri Devi Lestari Izaak, Abu Muna Almaududi Ausat

1 Program Studi Manajemen, Fakultas Ekonomi dan Bisnis, Universitas Buana Perjuangan Karawang, Indonesia
2 Program Studi Manajemen, Fakultas Ekonomi dan Bisnis, Universitas Muhammadiyah Luwuk, Indonesia
3 Program Studi Administrasi Bisnis, Fakultas Ilmu Administrasi, Universitas Subang, Indonesia

ABSTRACT

Digital transformation has reshaped the business landscape, compelling organizations to confront new challenges in terms of technology, business processes, and operational models. This research aims to identify and analyze effective strategies in developing human resources to respond to the digital transformation era, particularly in the context of business information systems. The study employs an in-depth review of existing literature through qualitative analysis to gain a comprehensive understanding of the subject, covering the period from 2012 to 2023. The study's findings indicate that in the face of the rapidly evolving digital transformation era, the role of Human Resources (HR) is crucial for organizational success, especially in the context of Business Information Systems. Digital transformation necessitates organizations to adapt and leverage innovative information technology to maintain their competitiveness. Strategic Engineering of Human Resources Development (HRD) becomes an essential foundation for effectively managing these changes. This process involves planning, development, and implementation of strategies to build HR capabilities that can address the challenges of the digital transformation era.

Keywords: Human Resources, Digital Transformation, Business Information Systems

INTRODUCTION

Digital transformation has emerged as a revolutionary force, reshaping the fundamental paradigms of business and compelling organizations to confront new challenges in assimilating advanced technologies, rejuvenating business processes, and adapting operational models (Harahap et al., 2023). In this epoch, the imperative for human resources extends beyond technical proficiency, demanding quick adaptability to transform into invaluable assets for organizational success (Ausat et al., 2023). The flexibility and agility of human resources are not merely necessities but are paramount keys to success in navigating the relentless dynamics of change in the evolving business world (Diawati et al., 2023).

Amidst the formidable changes in technology and the business environment, organizations grapple with substantial difficulties in identifying and retaining human resources equipped not only with the requisite technical skills but also with knowledge pertinent to the increasingly intricate demands of the digital age. In the face of swift technological and business landscape...
transformations, recruiting individuals capable of comprehending and adapting to digital dynamics has become a top organizational priority (Dubey et al., 2023). Consequently, people development assumes a critical role for organizations, strategically addressing skill and knowledge gaps essential for responding adeptly to the ongoing changes in today's work landscape.

The confluence of advancing technology and the burgeoning trend of online learning has triggered a significant transformation in the learning paradigm (Cook & Sonnenberg, 2014). This transformation unlocks new opportunities for human capital development, underscoring the importance of aligning people development strategies with effective learning methods. With the proliferation of digital learning platforms and innovative tools, organizations can integrate adaptive and interactive approaches (Meepung et al., 2021). Thus, human resource management must consider technology integration as an integral aspect of learning programs, fostering increased efficiency and effectiveness in addressing the complex challenges of the digital age.

Digital transformation acts as a major catalyst, bringing profound changes not only to organizational structure but also to governance and corporate culture. This process entails not only the integration of new technologies but also significant shifts in organizational operations and interactions. Human resource (HR) management occupies a pivotal position in aligning the workforce with these changing dynamics (Prastyaningtyas et al., 2023). Consequently, it becomes imperative for HR management to possess a profound understanding of the impact of digital transformation and formulate strategies ensuring that the workforce not only adapts but also contributes maximally to the achievement of company goals. A focus on developing new skills, fostering a collaborative culture, and cultivating responsive leadership is paramount for navigating continuous change and transforming digital transformation into an opportunity to enhance organizational competitiveness.

Against the backdrop of the ongoing digital transformation era, Business Information Systems (BIS) emerge as a critical backbone, serving not only as an operational component but also a strategic element forming the foundation of various organizational activities. Recognizing this increasingly fundamental role, organizations must accord special attention to the development of Human Resources (HR) capable of optimizing the use and management of Business Information Systems. Competent and well-trained human resources in the realm of information technology can ensure the seamless operation of BIS and strategically leverage them to enhance organizational efficiency, innovation, and competitiveness (Wahyoedi et al., 2023). Consequently, investing in the development of human resources possessing a deep understanding of the integration of Business Information Systems becomes imperative to lead the organization to the pinnacle of success in the digital era.

Hence, this research is specifically tailored to identify and analyze various strategies proven to be effective in the development of Human Resources (HR), with a particular emphasis on responding to the digital transformation era, especially in the context of Business Information Systems (BIS). The primary objective of this research is to gain profound insights into the best practices and innovative approaches successfully implemented by organizations in managing and optimizing their HR to respond to the rapid changes ushered in by the digital revolution. As such, it is anticipated that the outcomes of this research will not only provide a comprehensive understanding of the challenges and opportunities in developing HR in the era of digital transformation but will also serve as a practical guide, laying the foundation for companies to effectively manage their HR and successfully adapt in a dynamic business environment.

LITERATURE REVIEW

Human Resources (HR)

Human Resources (HR) refers to a critical element within an organization related to workforce, skills, knowledge, and creative potential possessed by individuals working within it (Agustian, Pohan, et al., 2023). HR involves aspects such as recruitment, development, motivation, and employee retention, as well as the management of various policies related to labor (Tusriyanto et al., 2023). As an integral part of organizational success, HR encompasses not only technical
dimensions and professionalism in task execution but also addresses humanitarian aspects such as interpersonal relationships, leadership, and change management (Gadzali, Ausat, et al., 2023). In a business environment constantly changing and driven by technology, the role of HR becomes increasingly crucial in responding to the challenges of digital transformation and ensuring that the organization has a competent and skilled team to achieve its strategic objectives.

**Digital Transformation**

Digital transformation refers to a profound change in how organizations use digital technology to alter business processes, operational models, and interactions with customers or other stakeholders (Agustian, Mubarok, et al., 2023). It involves the adoption of advanced technologies such as artificial intelligence, data analytics, cloud computing, and related technologies to enhance organizational efficiency, innovation, and responsiveness (Suherlan, 2023). Digital transformation also includes cultural and structural changes within organizations, promoting flexibility, collaboration, and employee engagement (Purnomo, 2023; Risdwiyanto et al., 2023). The primary goal of digital transformation is to create added value, improve competitiveness, and leverage opportunities in the digital era, enabling organizations to remain relevant and successful amid rapid changes in the global business environment (Wanof, 2023).

**Business Information Systems**

Business Information Systems (BIS) is a framework that involves the integration of information technology and business processes to support decision-making and operations within an organization (Qu et al., 2019). BIS includes the collection, storage, processing, and distribution of information relevant to business activities. It entails the utilization of software, hardware, databases, and communication networks to manage business data and present it in a comprehensible format for users. BIS can encompass various applications such as financial management systems, supply chain management, business analytics, and customer management systems (Oliveira et al., 2012). By implementing BIS, organizations can enhance operational efficiency, optimize business processes, and improve the capabilities of strategic decision-making through fast and accurate access to necessary information. Thus, BIS becomes a key element in supporting the performance and competitiveness of organizations in the context of digital transformation and the complexity of the current business environment (Masoud & Basahel, 2023).

**RESEARCH METHOD**

In this research, a qualitative methodology is employed to conduct a comprehensive literature review with the aim of exploring effective strategies in human resource development to respond to the era of digital transformation, particularly in the context of business information systems. The critical period covered in this study ranges from 2012 to 2023, utilizing this approach to examine scholarly works from various academic journals, conference papers, and reputable sources accessible through Google Scholar. Our specific search criteria, designed to encompass keywords related to human resources, digital transformation, and business information systems, guide the inclusion of sources based on their relevance to the research objectives. All limitations, such as language restrictions or publication biases, are transparently acknowledged. The study progresses through various stages, commencing with the identification of specific and relevant research topics and the formation of a comprehensive understanding of the background and research objectives. Clearly formulated search criteria guide the exploration of literature on Google Scholar, covering the timeframe from 2012 to 2023. After obtaining search results, a literature selection process is executed, involving the examination of abstracts and summaries for each identified article or source. Literature deemed less relevant or failing to meet the research criteria is excluded from the analysis. A thorough examination of the selected literature is then carried out, with a focus on identifying significant findings, concepts, theories, and trends within the literature. The qualitative approach is designed to achieve a comprehensive understanding of the research subject. Findings from the literature review are subsequently synthesized and elucidated by the
In the face of the fast-moving wave of digital transformation, the role of Human Resources (HR) is becoming increasingly crucial and essential in determining the success of an organisation, especially in the context related to Business Information Systems. Digital transformation has induced profound changes in the business paradigm, leading it to be more dynamic and closely connected to information technology (Gadzali, Gazalin, et al., 2023). Therefore, the ability of HR to adapt, develop information technology skills, and implement innovations is a key factor in maintaining organisational competitiveness in this digital era. The continuous development of information technology and the proactive engagement of human resources are important foundations for organisations to not only survive, but also thrive amidst the ever-evolving challenges and opportunities in a globally connected business world.

Strategic Engineering of Human Resources Development (HRD) is an essential foundation that is inevitable in the face of these dynamic changes. This holistic process involves careful planning, structured development, and meticulous implementation of strategies to build Human Resources (HR) capabilities to face and respond to the complexity of challenges posed by the rapidly evolving era of digital transformation (Mihu et al., 2023). In the more specific context of Business Information Systems, this approach involves deep mastery of technology skills, a holistic understanding of data analytics, intelligent application of artificial intelligence (AI), and a resilient ability to progressively adapt to continuous and rapidly changing technological developments. By integrating these dimensions comprehensively, organisations can ensure that their people not only have the necessary qualifications, but are also able to make a significant contribution to the achievement of strategic objectives in a constantly changing and competitive business environment.

First of all, in framing the Strategic Engineering of Human Resources Development (HRD), it is necessary to clearly define the vision and mission of the organisation specifically related to the digital transformation journey. A deep understanding of the company's strategic direction and the extent to which information technology can be a catalyst in supporting the achievement of business goals is an essential foundation for Human Resources (HRD) development (Hamadamin & Atan, 2019). This involves identifying the changes required in various aspects, from organisational culture to work structure and business processes. This process of defining the organisation's vision and mission provides a strong foundation for establishing a purposeful HRD roadmap, ensuring that every HR development effort is aligned with the company's long-term vision and able to respond to the dynamics of a rapidly changing business environment due to digital transformation.

The next step in the strategic engineering of human resources development (HRD) involves designing a holistic training and development programme, which aims to improve not only the technical skills but also the non-technical aspects of employees. The programme should be carefully designed to cover various aspects, including in-depth training in the utilisation of business information systems, a deep understanding of data analytics to support better decision-making, and the integration of artificial intelligence in the context of business operations. Furthermore, the programme needs to place special emphasis on developing soft skills, such as the ability to adapt to change, foster creativity, and enhance leadership skills (Zuma, 2020). With this comprehensive focus, HRD can ensure that employees not only possess the necessary technical qualifications but are also equipped with the interpersonal and intellectual skills required to compete effectively in an ever-changing and increasingly complex business environment.

In addition, within the framework of Strategic Engineering of Human Resources Development (HRD), there is another important dimension that includes recruitment and employee selection strategies that are highly relevant to support digital transformation. The identification and utilisation of employee talent and potential in the face of dynamic change is the key to success in
effective Human Resources (HR) management (Jarvi & Khoreva, 2020). Careful recruitment and selection of employees that meet the needs of the organisation in the face of digital challenges is essential. In this context, the use of modern technology, such as data analytics platforms, plays an important role in assessing employee performance, identifying development potential, and informing more strategic recruitment decisions (Gilch & Sieweke, 2021). By encapsulating technology in the recruitment process, HRD can more effectively support organisations in dealing with change, building resilient teams, and ensuring that people have the qualifications and capabilities that match the evolving demands of the digital transformation era.

Furthermore, the importance of collaboration between Human Resources Development (HRD) and Information Technology departments is not only imperative but also an integral foundation in navigating the complexities of digital transformation. These two entities need to establish a close partnership, complement each other, and work together synergistically to identify specific organisational needs in the face of rapid technological change. This process involves an in-depth analysis of the skills required, not only from a technical perspective but also soft skills aspects relevant to the evolving business context. By combining HR's expertise in technology and the IT team's in-depth knowledge of business dynamics, this collaboration can design holistic and relevant development programmes, create a work environment that fosters innovation, and provide the foundation for sustainable growth (Chen et al., 2019; Dwivedi et al., 2023). Strengthening the synergy between HR and IT teams is not just about achieving operational efficiency, but also building a strong foundation for constant exploration of innovation, unleashing collaborative potential that results in creative solutions, and delivering competitive advantage in a dynamic digital age.

In addition, HRD also has a strategic role in establishing and maintaining a culture of continuous learning at all levels of the organisation. Given the rapid pace of technological development, sustainability in the face of digital transformation requires the adoption of a lifelong learning philosophy as a key pillar (Teng et al., 2022). In order to create a strong foundation for sustainable growth, HRD can initiate various programmes and initiatives that promote continuous learning (Torraco & Lundgren, 2020). This involves concrete steps such as mentorship programmes that support interdepartmental knowledge exchange, and the development of internal learning communities that foster collaboration between individuals. By doing so, HRD can create an environment that supports, encourages and motivates employees to continuously learn, innovate and develop new skills that are relevant to the dynamic demands of the business world influenced by digital transformation. Overall, the learning culture instilled by HRD is key in empowering organisations to face a changing future.

Overall, the Strategic Engineering of Human Resources Development (HRD) process in anticipating and responding to digital transformation, especially in the context of Business Information Systems, requires detailed and targeted steps. This includes careful planning to design an HR development blueprint linked to the organisation's strategic goals, involving specific details in the face of changing technology and business dynamics. Furthermore, the importance of close collaboration between HRD and the IT department is central in setting a solid foundation, ensuring that organisational needs are properly identified and met with innovative solutions. In addition, a focus on skills development, both technical and non-technical, is essential. This holistic approach involves building employee capabilities in the use of cutting-edge technology, in-depth data analysis, and enhancing soft skills such as adaptability and leadership. By implementing this strategy, organisations are not only able to create reliable and well-trained Human Resources, but also have a solid foundation to face and capitalise on the ever-evolving opportunities and challenges of the dynamic digital age.

CONCLUSION

In facing the rapid changes of the digital transformation era, the role of Human Resources (HR) holds significant importance in achieving organisational success, particularly within the scope of Business Information Systems (BIS). The digital transformation era requires organizations to adapt and leverage information technology innovations to remain competitive. Strategic
Engineering of Human Resources Development (HRD) serves as a fundamental foundation for effectively managing these changes. This process involves planning, development, and implementation of strategies to build HR capabilities capable of addressing challenges arising in the digital transformation era. Recommendations derived from this research include:

1. Definition of Organizational Vision and Mission: HRD needs to clearly define the vision and mission of the organization related to digital transformation. A profound understanding of the company's direction and the contribution of information technology to business goals will form the basis for HR development.

2. Training and Development Programs: Design comprehensive training programs to enhance both technical and non-technical skills of employees. This should encompass understanding business information systems, data analysis, artificial intelligence, and soft skills such as adaptability, creativity, and leadership.

3. Recruitment and Employee Selection: Involve HRD in recruitment to identify talent and potential employees who can support digital transformation. Utilize technology, such as data analytics platforms, to assess employee performance and identify development potential.

4. Collaboration between HRD and IT: The importance of synergy between HRD and the information technology department cannot be overlooked. Close collaboration is essential to identify organizational needs, analyze required skills, and design suitable development programs.

5. Continuous Learning Culture: Cultivate a culture of continuous learning throughout the organization. Initiatives like mentorship, knowledge exchange, and internal learning communities can assist employees in ongoing learning and development, ensuring sustainability in the face of technological changes.

6. Holistic Approach: Implement a holistic approach in the Strategic Engineering of HRD. Focus on thorough planning, close collaboration between HRD and IT, and the development of both technical and non-technical skills to build a resilient HR that is prepared to face the evolving challenges of the digital era.

By adopting these measures, organizations can position themselves for success in navigating the profound changes brought about by digital transformation within the context of Business Information Systems.

REFERENCES


